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New Deputy Commissioner of Education

JOHN RALPH RACKLEY has entered on duty as the Deputy Commissioner of Education in the Office of Education. He succeeds J. Kenneth Little, who returned to the University of Wisconsin in July.

Formal Education

The new Deputy Commissioner is a native of Oklahoma. He attended public schools in that State and was graduated from the Cherokee High School. He was a student at Oklahoma Baptist University, Northwestern State College at Alva, Okla., and the University of Oklahoma. He received both the bachelor of arts and the master of arts degrees from the last-named institution. His fields of specialization were history, English, and sociology. In 1940 he was awarded the doctor of philosophy degree by George Peabody College for Teachers, with a major in history and a minor in geography. While at the George Peabody College for Teachers he studied concurrently at Vanderbilt University. He has also done graduate work in education at Yale University.

Educational Experience

Dr. Rackley came to his new position, on leave, from the University of Oklahoma. Except for a 3-year period of military service and 2 years of graduate study, he has been engaged in educational work since 1930. For 7 years he was a teacher of history and social studies in the high schools of Oklahoma City. He went to the Teachers College of Connecticut at New Britain in 1939 as assistant professor of social science, and in 1946 he became dean of the college. Since 1949 he has been dean of the College of Education and professor of education at the University of Oklahoma.

His educational experience also includes service as a member of the Oklahoma Commission on Teacher Education (1946–51), as a visitor for the American Association of Colleges for Teacher Education to evaluate member institutions (1950–54), and as a member of the executive committee of the association (1953 to the present). In 1955 he was elected a member of the Board of Review of the North Central Association Commission on Colleges and Universities.

Other Activities

Other positions which the new Deputy Commissioner has held have been: (1) Personnel consultant to the Oklahoma State Department of

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Health for the purpose of establishing a merit system of personnel administration; and (2) a member of the Board of Public Works in New Britain, Conn.

For 7 years he was a member of and officer in the Oklahoma National Guard and for 3 years an officer in the Connecticut State Guard. During World War II he served for 3 years with the Army of the United States as a lieutenant and captain in the Signal Corps. Since 1948 he has been a member of the Active Reserve, U. S. Army. He is a major in the Signal Corps and mobilization designee to the Office of the Assistant Chief of Staff, G–1, Department of the Army.

Since 1946 he has been a member of the Rotary Clubs of New Britain, Conn., and Norman, Okla.

Family

Dr. Rackley was born in Lambert, Okla., in 1907. He married Virginia Mills of Stillwater, Okla. There is one son, Gordon.

Scientific Manpower Shortages in Industry

THE SUPPLY of qualified research scientists and engineers in the United States falls far short of industry's needs, according to *Shortage of Scientists and Engineers in Industrial Research*,[1] a report recently issued by the National Science Foundation. The report is based on interviews with officials of approximately 200 large companies, which employ well over half of the Nation's industrial research scientists and engineers. At least half these companies reported that they were unable to hire enough research scientists and engineers to meet their needs, and one out of three reported major or substantial shortages of such personnel. The remaining half of the companies interviewed did not report numerical shortages of research personnel, but many of them emphasized their need for better qualified scientists and engineers.

Industries in which the proportion of companies reporting shortages of scientists and engineers was largest were aircraft, electrical equipment, petroleum, paper, food, and primary metals. Every aircraft company in the survey indicated a shortage of research and development personnel. In all other industries some companies said that their research programs were not impeded by a lack of scientists or engineers. On a nationwide basis, however, the survey findings clearly indicate that the demand for scientists and engineers for research and development programs exceeds the supply of qualified personnel in a wide range of fields—chemical, electrical, mechanical, and aeronautical engineering; chemistry; physics; metallurgy; mathematics; and a number of others.

The demand for additional scientists and engineers extends to all levels of experience and training, although most company officials said they had a greater need for personnel with experience or advanced degrees than for new graduates with only the bachelor's degree. The need for "quality" in research personnel was strongly emphasized. Officials of many companies reiterated that requirements for research scientists and engineers cannot be met because well qualified, well trained people are difficult to find.

The study on which these findings are based is part of a national survey of research and development resources being made by the National Science Foundation as part of its fact-gathering activities in support of the development of national science policy. The survey includes, in addition to industrial research, coordinated studies of the research activities of colleges and universities, trade associations, commercial laboratories, nonprofit research institutions, foundations, and government agencies.

[1] National Science Foundation, *Science Manpower Bulletin No. 6.* July 1955, 17 p. processed.

National Science Foundation Grants

THE NATIONAL SCIENCE FOUNDATION awarded 161 grants totaling about $1,820,540 during the quarter ending June 30, 1955. This is the fourth group of awards the Foundation has made during the fiscal year 1955. Since the beginning of the program in 1951, it has made 1,650 awards totaling more than $17 million.

The grants are for the support of basic research in the natural sciences, conferences and studies on science, scientific information exchange, and the scientific manpower register. The research fields included are anthropological and related sciences, astronomy, chemistry, developmental biology, earth sciences, engineering sciences, environmental biology, genetic biology, mathematical sciences, molecular biology, physics, psychobiology, regulatory biology, and systematic biology.

Current Loss of Talent From High School to College: Summary of a Report

By CHARLES C. COLE, JR.*

ARE THERE STUDENTS of high ability not now entering college who could be induced to go to college and follow science careers? If so, what inducements would appear to be most practical in encouraging such students to continue their education? What results in terms of an increased supply of scientifically trained persons could be expected from these inducements?

Study of Loss From High School to College

These were some of the questions which the National Science Foundation asked the College Entrance Examination Board in the fall of 1954. The College Board in turn asked me to undertake a study that would measure the loss of high level ability from high school to college and that would evaluate various methods of decreasing this loss. Assisting me in this project were Mrs. Jane Blizard of the New England Institute for Medical Research, Paul Brandwein of the Forest Hills, N. Y., High School, Herbert A. Deane, of Columbia University, Robert J. Havighurst, of the University of Chicago, Mrs. Allaire U. Karzon, lawyer of Buffalo, N. Y., and Wesley W. Walton of the Educational Testing Service. A committee of prominent educators reviewed the approach, methods, and findings of the project and criticized the manuscript. The result of this study was a report, *Encouraging Scientific Talent*, submitted to the National Science Foundation in June 1955. Although the report is not now accessible for general distribution, printed copies should be available early next year.

In this report I have attempted among other things to describe the nature, characteristics, and origins of scientific ability, to bring together information on the supply of and demand for scientifically trained persons, and to suggest means for conserving the Nation's intellectual resources. The report also identifies certain deterrents to the production of scientists as well as certain factors which seem to encourage their training. Formal programs of recruitment, such as scholarship awards, the improvement of teaching, and the encouragement of a public opinion favorable to the production of scientists, are analyzed.

The rapid rate of growth in the scientific professions during the last 50 years has obscured a relative shortage of specialized persons in the labor force. As our industrialization matures and particularly when we are faced with a crisis like the Korean War, we discover that the phenomenal increase in the numbers graduating from college and graduate school has not been large enough to prevent critical shortages in certain professions. The realization is dawning on us that we need a new concept of scarcity in our society. Having temporarily solved many of the material shortages that plagued us in the past, shortages of food, clothing and shelter, of capital, of natural resources, of power, our atomic era has uncovered its special kind of scarcity—a shortage of trained ability. Decreasing the loss of talented youths from high school to college is, therefore, conservation of intellectual resources. This salvaging of capable high school graduates to higher education is a vital activity if the United States is to maintain its position of world leadership.

Questionnaire

How great is this loss of talented secondary school students? Although there have been many useful local and statewide surveys of school drop-outs and of the loss in transition from high school to college, up-to-date nationwide figures on secondary school students' educational and professional plans have been lacking. In order to learn more about vocational aspirations and college and financial plans of talented high school graduates in 1955, we asked the Educational Testing Service to undertake a nationwide research study that would involve a questionnaire and aptitude test administered to a random sample of public secondary school seniors and sophomores. The preparation and operation of the National Study of High School Students and Their Plans was under the direction of Glen Stice, Warren Torgerson, and William Mollenkopf.

*Assistant Dean of Columbia College, Columbia University.

With the scoring of these questionnaire answers we now have nationwide figures on adolescent motivation for college, interest in science, financial plans, and parental backgrounds of the high ability students in our public high schools. In addition to revealing the extent of college-going intentions in 1955, some of these statistics throw light on the factors determining whether or not an intellectually gifted person goes to college.

The 30-minute questionnaire was completed and returned by 32,750 seniors in a random sample of public secondary schools with 12th-year students, ranked in order of size in each of the four major geographical regions. This represented a sample of approximately 2.6 percent of the public high school seniors in the United States at the time the questionnaire was administered. It was not practicable or financially possible to include private school students in the sample.

Aptitude Test

In conjunction with the questionnaire, a brief academic aptitude test was administered. This enabled us to identify the students sampled that could be reasonably considered as possessing high level ability. By so doing it was possible to apply a common test standard to all the students surveyed rather than rely on individual school estimates of high level ability. The analysis of questionnaires was undertaken only for the 9,689 seniors who scored 12 or higher on the ability test. This represented approximately 30 percent of the seniors in the sample. These students were designated "high scoring," and it was assumed that they possessed sufficient ability to do college work.

Understandably, this high scoring group was not evenly distributed geographically. A much larger proportion of the seniors in the West and Northeast scored 12 or higher on the test than in the South.

The percentage of seniors in this sample in each region scoring in the upper 30 percent is shown below:

Region	*Percent*
West	35
Northeast	34
Central	29
South	20

Hypotheses Tested

In devising the questions to be asked in the National Study of High School Students and Their Plans we wished to test a number of hypotheses about college-going. First, local studies have frequently shown that interest in college-going is greater among students from professional groups than from farm and labor classes. This hypothesis was confirmed by the national study. It reveals that 83 percent of the boys in the high-scoring group whose fathers are in medicine and 65 percent of the boys whose fathers are in scientific professions intend to go to college immediately after graduation. Only 38 percent of the sons of farmers and 25 percent of the sons of semi-skilled workers intend to go directly to college.

Another hypothesis that appears to be confirmed by the results of the study is that there is a direct relationship between interest in college-going and intellectual ability. As the following figures indicate, the higher the score on the ability test, the greater the percentage intending to continue their education:

Score on test	*Percentage planning to enter college full time, winter session, 1955*
12	34
13	36
14	41
15	44
16	51
17	54
18	58
19	62
20	69

Interest in college also appears to be closely related to parental education, classmates' plans, and the extent of high school guidance. Indeed, the questionnaire results suggest a considerable determinism involved in the process of planning for college. Insofar as guidance is concerned, the questionnaire responses revealed how different the interest in higher education is between those who have been exposed to high school guidance and those who have not. Two-thirds of the high ability boys who have discussed college "quite a lot" with their teachers or counselors are probably on college campuses this fall. Only 21 percent of those who had no such counseling intended to go to college this fall. Conversely, while only 2 percent of those who have discussed the subject a lot at school say they have no interest in higher education, 26 percent of those who have had no high school counseling about college lack the motivation to continue in school. Although these figures suggest a significant relationship one cannot conclude that there is necessarily a causal connection.

Vocational Interests

One of the questions asked of these seniors required them to think about what they would like to be 15 years from now. The answers reveal a considerable amount of realistic, practical vocational thinking by these young persons. More than 25 percent of the boys in the top 30 percent of ability said they would like to be engineers 15 years from now; 10 percent want to go into business; 8 percent into medicine; and 8 percent in other unspecified professional fields. Approximately 6 percent would like to become physical scientists. Only 1 percent aspire to become social scientists. Four percent aspire to each of the following: law and politics, white collar jobs, skilled labor, farming, and education. Insofar as the latter field is concerned, three times as many boys would like to be coaches as classroom teachers.

About 20 percent of the high-scoring girls, however, would like to be in education 15 years from now, 18 percent in white-collar jobs, and 12 percent in nursing and medical technical work. Evidently 12 percent of them desire solely to be housewives 15 years from now. No more than 1 percent of the high ability girls aspire to science or engineering, both of which continue to be masculine occupations in the eyes of adolescents.

Interest in science as a subject in high school appears to be strong among both sexes, however, if this sample of seniors with college level ability is any indication. Fifty-six percent of the high ability boys would have preferred to have taken more science courses in secondary school. Thirty-eight percent of the girls wanted more science in high school. Only 4 percent of the boys and 6 percent of the girls would have preferred less science work in school. The seniors revealed a similar attitude toward mathematics. Although their responses may have been influenced by the fact that they did not have to abide by what they said, these percentages are high enough to suggest that the high school student of high ability wants to take more science courses or realizes their importance in the world today.

The seniors who planned to attend college were asked to indicate what they would really be most interested in studying in their undergraduate years. Their answers showed the following preference among high-scoring boys: engineering, 24 percent; physical science, 8 percent; biological sciences, 2 percent; mathematics, 3 percent; pre-med or pre-dental courses, 6 percent, humanities, 10 percent; and social sciences, 2 percent.

Reasons for Not Attending College

It was also hoped that the questionnaire results would throw additional light on the extent to which financial barriers are an important deterrent to college-going among those of high ability. The seniors participating in the national study were asked, "If you do not go to college, what will the reason probably be?" No limit was put on the number of reasons an individual might circle, but they were asked to indicate their most important reason. Twelve percent of the high-scoring group reported that if they did not go to college the most important reason would be because it would cost more than they or their families could afford. Almost half of these high level ability students cited expense as an important reason why they might not get to college.

In answer to this question, about 25 percent of the high-scoring boys and 45 percent of the girls cited the lack of a college goal as possibly an important reason for not continuing their education. This suggests that there is considerable validity in believing that, despite the importance of financial need, lack of motivation for college is a stronger deterrent to college-going among those of high ability who do not go to college.

This was apparent in the answers to several other questions on the questionnaire. The seniors were asked to indicate what they would really like to do when they finished high school. They were also asked to indicate what they thought they would do after graduation. Fifty-one percent of the seniors in the top 30 percent of ability would really like to go to college full-time immediately after graduating from high school. Forty-five percent of the seniors expect to be able to do so. About 31 percent of the boys and 20 percent of the girls among the senior group scoring in the top 30 percent expect to be able to get to college by working for a while, or by combining part-time college attendance with work. About 9 percent of the boys and 18 percent of the girls say they have no interest in higher education. Half this number, or about 6 percent, would really like to go to college but see no way of getting there. The remaining 9 percent of the boys and 12 percent of the girls could not easily be classified because of the nature of their response or because they failed

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to answer this particular question. However, it is evident from the replies of the latter group that although they do not intend to go to college, some of them would be interested in scholarship aid in order to do so.

Amount of Loss of Talent

It is possible to estimate the loss of talent from high school to college on the basis of these replies. It must be remembered, however, that what these seniors said they would do and what they actually did may not be the same. Follow-up studies of other groups have revealed that not all who intend to go to college even as late as their senior year in high school manage to go. In addition, the extent of college going among private school pupils may not be the same as it is among the public school population.

Taking these things into consideration, it would appear that in 1955 there are between 60,000 and 100,000 high school graduates of college ability who failed to enroll in college for financial reasons. There appears to be another group of approximately 100,000 in number who have high ability but who lack any interest in a higher degree.

Some of the principals whose schools participated in this study sent helpful comments about the factors in their communities either helping or hindering interest in higher education. It seemed evident that where there was a tradition of college going in the community, where economic conditions were good and where the school was adequately supported, adolescent interest in college was strong. In depressed economic areas or where schools were inadequately staffed or where the home had little interest in higher learning, a much smaller proportion of high school seniors included college in their plans. The economic barriers to higher education, strong though they are, are not, however, the only ones by any means. Prosperity also accounts for some of this loss of talent. One principal reported, "We are near two factories that employ many young women. They can make more within six months than a college graduate can in several years. Even the smart ones see no reason why they should go to college."

The statistics of the National Study of High School Students and Their Plans tend to validate the conclusion that every year up to 200,000 18-year-olds with college level ability are lost to higher education and presumably do not develop their talents to the fullest possible degree. This is a serious loss of intellectual resources that is all the more ironic in the face of current and future bulging enrollments. It is a costly loss in view of the Nation's shortage of scientifically trained persons.

Conclusions

The report, *Encouraging Scientific Talent*, ends with a number of conclusions. Among them are the following: There is no single dramatic solution to the problem of how to prevent the wasting of intellectual resources or of increasing the number of scientifically trained persons. There are losses to the future scientific labor force as a result of some poor teaching, insufficient guidance, and inadequate facilities in the Nation's overcrowded schools. Indeed, at present one of the most serious crises the Nation has ever faced is the shortage, almost the disappearance, of the competent, well-trained, stimulating high school science teacher. It is a breed that faces extinction. Third, although some able science students are deterred or discouraged from science or engineering careers because of the school situation, many more are turned away by deterrents in society itself. Fourth, partly because of these community and parental deterrents, lack of motivation appears to be a strong reason why a majority of the superior high school graduates fail to go on to college. Nonetheless, insufficient financial support appears to be the sole or primary reason why between 60,000 and 100,000 of these superior persons fail to enroll in colleges each year.

Medical Research Programs Reviewed

A SPECIAL COMMITTEE on Medical Research, appointed by the National Science Foundation, will review and evaluate the medical research programs of the Department of Health, Education, and Welfare, according to a joint announcement of the Department and the Foundation. The review is being made at the request of the Department.

In requesting the review, the Department pointed out that its program comprises a major portion of the Federal activity in medical research and expressed the belief that it should be subjected to critical review, particularly with regard to its scope and the distribution of support among the special areas of medical research.

United States National Student Association

By HARRY H. LUNN, JR.*

IN A DEMOCRATIC SOCIETY there is much that an individual can do to make democracy meaningful, but it requires an organization of individuals to render effective their collective energies and resources for the achievement of major goals. In the student community the lack of organization has long been a problem as student governments have sought for the students they represent methods of improving student activities, achieving educational goals, gaining representation on national and international levels, and training in citizenship.

Purposes

The United States National Student Association (USNSA), a confederation of student governments representing college student bodies, was created by American students to serve the academic community through meeting these needs. Its goals were defined precisely in the preamble to the constitution by which the students pledged themselves to maintain academic freedom, stimulate and improve democratic student governments, develop better educational standards, improve student welfare, promote international understanding, guarantee to all people equal rights to and possibilities for education, and foster the recognition of the rights and responsibilities of students to the school, the community, humanity, and God, and to preserve the interests and integrity of the Government and the Constitution of the United States of America.

Formation and Support

A national student organization to meet these needs is not unique on the American educational scene. For a decade before the Second World War the National Student Federation of America carried forth a successful program, but the wartime emergency caused its dissolution. Impetus for USNSA's formation came when 25 American students returned from a world student meeting in 1946 concerned that this country had no representative student voice on the international scene. Their interest resulted in the Chicago Student Conference of December 1946 attended by representatives from 300 colleges and 25 student organizations. These delegates prepared recommendations on the organization and character of the association and chose a continuations committee to draft a constitution. In September 1947 the USNSA Constitutional Convention was called at the University of Wisconsin, and there the delegates established the constitution and mapped a program for the newly formed association.

With any accredited college, university, junior college, normal school, or technical school eligible for membership upon ratification of the constitution and payment of annual dues, USNSA today has more than 275 member institutions located in all sections of the country. Financial support for the association's activities on the members' behalf is derived in three ways: Through member school dues based upon the size of the student body (these assessments have been reduced substantially since 1947); publications and project income; and special grants from foundations and individuals.

Activities

USNSA has three levels of activity: campus, regional, and national. By virtue of its membership, the student government is the focal point of activity on the campus level and implements programs and policies to whatever degree it desires. Benefits do not accrue merely to student government, however. The valuable publications on specialized subjects, the monthly *Newsletter* and *Student Government Bulletin*, and the regional and national meetings all provide ideas and experience for student leaders of benefit to the entire academic community. The campus retains autonomy on policy and program since it is not bound to follow any national activity or policy. Programs and policy are formed on the national and regional levels as overall goals toward which the association is moving.

Each member school belongs to 1 of 19 geographical regions in which it keeps close contact on programs with other schools and attends periodic meetings. Typical regional programs focus on development of student discount service benefits, leadership training, honor systems, orientation systems, and other current student projects. Focus of association activity is the annual National Student Congress, which brings 800 student leaders from student government and other activities together

*President, U. S. National Student Association. The Eighth Congress of the Association was held on the University of Minnesota Campus, August 21–31.

for a 10-day workshop and policymaking meeting. It is preceded by a special 3-day workshop conference for student body presidents. Faculty members and student personnel officers are invited to the Congress and have special meetings of their own when not observing the work of the Congress. Following participation in 22 subcommissions, in 4 commissions, and in plenary sessions, delegates elect 6 national officers to carry on mandated programs during the year. A National Executive Committee of regional representatives serves as a review board of association activity and is empowered to enact emergency policy recommendations. Advisory boards of leading educators and citizens have been created to assist the elected officers and the NEC. These are the National Advisory Council, consulted on the whole USNSA program, and the National Advisory Board, International Advisory Board, and Travel Advisory Board, concerned with the respective area programs.

Relations With Other Organizations

In carrying out programs, the national staff maintains close liaison with other educational organizations including the American Council on Education, in which it maintains constituent membership, the National Education Association, the World University Service, the Young Adult Council, the National Scholarship Service and Fund for Negro Students, the National Association of Student Personnel Administrators, the National Association of Deans of Women, and the American Personnel and Guidance Association.

The recognition accorded the association's work is widespread. A joint committee of the NASPA, NADW and APGA has reported (April 1, 1953) "the NSA is the most representative national student organization in the United States. . . . NSA has spearheaded and led the mobilization of the unions of students of the free world in combatting the propaganda and distortion of truth fostered by the Communist International Union of Students. NSA, more than any other student group, symbolizes the youth of the free world to the students of those critical areas where the battle of ideas has not yet been resolved. NSA has demonstrated that it never fails to defeat subversion by sticking faithfully to democratic methods and principles."

Throughout the Year

Throughout the year intensive programs in educational affairs, student government, and student affairs are carried forth under appropriate national commissions which focus attention on specific campus needs. Publications, meetings, and a student government information service reflect these programs. In addition to helping student governments do a better job with oncampus projects, the association is interested in encouraging them to be better representatives of student opinion on the national and international levels. Emphasis is placed on the discussion of issues with the important limitation that policy consideration should be only on nonpartisan political issues which affect students in their role as students. Through USNSA students have concerned themselves increasingly with important issues such as military manpower, Federal aid to education, foreign study scholarships, student economic benefits, and other current issues. In this way students become cognizant of their responsibilities as citizens and of their obligation to concern themselves with the community in which they live now.

This recognition has extended to the international community where the association has played an important role on behalf of American students. Recognizing that the IUS was a Communist-controlled group, USNSA refused to establish membership in it and instead worked on programs of practical cooperation with free-world student unions. The association became a member of the International Student Conference, a nonpartisan political instrumentality of cooperation which has been denounced by the IUS. At the fifth meeting of ISC in July at Birmingham, England, USNSA representatives met with delegates from 52 other countries. Through this Conference the USNSA has carried on relations with many other national unions which have resulted in fruitful exchange of persons, assistance, and information. The USNSA travel program, which last year sent some 800 students abroad, is planned in cooperation with these student groups. American students have been represented at the Inter-American Student Congress, the International Student Seminars, the U. S. National Commission for UNESCO, and other special meetings. For the last three summers the association has offered an International Student Relations Seminar in this coutry for 15 American scholarship students, giving them an opportunity to study contemporary world problems in their relation to students and to train for meaningful participation in world affairs.

Association activity is centered in three offices: *National*, 1234 Gimbel Building, Philadelphia 7; *international*, 52 Boylston Street, Cambridge, Mass.; and, *travel*, 48 West 48th Street, New York.

Results

The entire USNSA program is dedicated to providing a more meaningful educational experience for the Nation's students. Through its emphasis on citizenship responsibility and on cooperative effort within the academic community, it has received support of students, educators, and citizens alike. In the words of President Dwight D. Eisenhower: "By promoting student participation in campus governments and national affairs, the United States National Student Association is helping to strengthen our educational system and to prepare students to become responsible citizens in the democratic community now and in future years. In its international work, your Association is cementing bonds of friendship with students throughout the world and laying the groundwork for ever increasing cooperation among free nations."

Shortage of Teachers or Imagination?

By RAYMOND C. GIBSON*

BETWEEN now and September 1959 the United States will need to recruit approximately 764,900 teachers for the elementary and secondary schools of the Nation. Nearly one-half million of these will be needed to replace the 7.5 percent who will leave the profession in each of the next 5 years; and it will take 267,000 new teachers (about 52,000 a year) to manage the increase in enrollment of 30 elementary and 25 high school pupils per teacher. This is the minimum necessary to maintain the present level of competency. It makes no provision for replacement of teachers holding emergency certificates. At the present rate of preparing annually only 56,800 teachers who actually accept positions, there could be as many as 500,000 emergency certificates in force by 1960.

This staggering responsibility, when viewed against the current supply of teachers, is a challenge to the continuation of the Nation's universal common schools. Many research studies are under way—scholarships for undergraduates, teaching aides and aids, raising or lowering standards, selective admissions, better working conditions, salary increases, and better retirement benefits.

Action as well as research will be necessary. Many colleges and communities are taking action which will help to solve the problem. But more is needed. This article suggests a 5-point program of action to provide enough qualified teachers for all schools.

* Chief for teacher education, Office of Education.

Use the New Graduates

Teacher training institutions graduated 86,696 students in 1955 who now hold the bachelor's degrees and certificates to teach. But, according to the National Education Association's *Study on Teacher Supply and Demand*, 29,896 of this group did not accept teaching positions.

It is suggested that college administrators and faculties reexamine their policies with respect to recruitment, selective admission, orientation, guidance, student organizations, curriculums (general, special, and professional education), student-staff relations, institutional organization and administration, and teacher placement service. It would yield much quicker results to recapture a part of this group of nearly 30,000 than to spend 4 years preparing others to take their places.

Stop the Exodus

The second proposal is to stop the exodus of experienced teachers. This is a challenge to local communities, boards of education, school administrators, State legislatures, and leaders in teacher training institutions to take steps to retain most of the teachers who quit each year because of various reasons, among which are inadequate salaries and undesirable working and living conditions. It is estimated that approximately 85,000 teachers (about 7.5 percent of the total) will quit the profession this year. The most significant cause will be marriage and family problems. But many will quit because they can't support families

on their salaries and they are unwilling to make the sacrifice, particularly in view of the difficult working conditions.

What would be the reaction if thousands of ministers, nurses, lawyers, doctors, and engineers left their chosen professions each year to become carpenters, bricklayers, mechanics, and filling-station operators? Well, that is happening to those who teach the Nation's children— its greatest asset.

School administrators and lay citizens need to study the status of teachers as compared to other groups of professional workers. What is the economic status of teachers in the community? Must they live below the standards of other groups whose occupations are less demanding in terms of years of preparation? What are the working conditions? Is the teacher required to work all day without a break except one-half hour to supervise a lunchroom or to do clerical duties? What is the size of her classes? Does the teacher participate in developing the policies of the school? What are the relationships between the administrators and the teachers?

Is the teacher a member of the community in her capacity as an individual citizen? Does the teacher really have a feeling of belonging in the community? What recreational, social, and cultural advantages does the community offer? Some communities are concerned about these problems and are taking action—and they don't lose their teachers. Leaders in the field of teacher education need to join local school administrators and citizens in finding ways and means of retaining competent teachers.

Recruit Liberal Arts Graduates

The third source of good teachers is from the thousands of liberal arts graduates whose family status will permit them to enter teaching. A program to recruit from this group is in action. Recent graduates of liberal arts colleges are also taking professional education courses in order to prepare for teaching.

Many married women on college campuses throughout the Nation are taking the required professional courses during the summer sessions and teaching during the regular year. Having taken their degrees in the liberal arts, these women have already completed 80 percent of the curriculum needed for teaching. Their principal deficiency is the professional education sequence—and they have the core of that, for they understand children. Fortunate indeed will be those children who, during the next 10 years, are taught by mothers who are college graduates, because there will continue to be thousands of classrooms in charge of teachers with less than 4 years of college preparation.

All Colleges Should Help

A fourth source of teachers is for all institutions of higher learning in the United States that offer the bachelor's degree in the liberal arts to begin the preparation of elementary and secondary teachers. This is a part of the long-range solution. There are very few institutions that are devoted exclusively to the preparation of teachers. Since the preparation of teachers may be carried on effectively in multipurpose colleges, it is highly desirable that all liberal arts institutions assist the Nation in meeting the increased demand for teachers.

Some people will say that there are not enough competent people in professional education to develop teacher education in all institutions of higher learning. But the best teachers, supervisors, and administrators from the public schools in any State are qualified to develop and to teach the education courses necessary for the preparation of elementary and secondary teachers.

Scholarship Loans

Some capable young people may be prevented from preparing for teaching because of the cost of 4 years in college. One way of meeting this situation is through scholarship loans by the States or by individuals and interested groups. Several States have already used this method with success.

It is suggested that the scholarships be sufficient to cover all costs of maintenance and tuition; that each student sign a note for each year of his scholarship; and that for each year that the graduate teaches in his home State one note should be canceled. If he does not teach, he should repay the money.

Students for this program could be selected from the upper third of the high school graduating classes of 1952 through 1954—students who did not go to college. The maturity of members of this group should make it possible for them to complete the bachelor's degree in less than 4 years.

This plan of selecting for teaching able students who for various reasons could not attend college would help each State to keep the supply and demand for teachers more nearly in balance, and it would recapture some of the Nation's best talent for higher education and the teaching profession.

Conclusion

The task of staffing our schools is tough but not impossible. If the educational and governmental leaders at the local and State levels will stop the wholesale exodus of teachers by paying adequate salaries, providing satisfactory working conditions and community status for teachers; if the colleges will bend every effort to place in a teaching position every qualified person who prepares to teach; if all colleges and universities will make teacher education curriculums available to their student bodies; if liberal arts graduates in greater numbers are encouraged to become teachers; and if a few dollars are used wisely on the development of teaching talent through scholarships, the Nation not only can provide enough teachers for all children but enter 1960 with the highest standards that the profession has ever attained. Nothing less than this should satisfy the American people.

Four Cooperating Massachusetts Institutions Get Grant

A 3-YEAR GRANT totaling $30,000 has been made by the Fund for the Advancement of Education to Mount Holyoke, Smith, and Amherst Colleges and the University of Massachusetts to encourage and assist cooperative educational programs among them. Located within a radius of 5 miles of each other, more than 10,000 students are currently enrolled in the 4 institutions which, since World War II, have made efforts to extend joint educational projects wherever possible.

According to the terms of the award, the fund will grant $6,000 annually for 3 years (1955–57) to staff the Hampshire Inter-Library Center, now maintained jointly on the Mount Holyoke campus by the four recipients. The center operates as a cooperative unit, acquiring and storing books and periodicals for its members and attempting to eliminate unnecessary duplication of costly volumes and subscriptions.

In addition, the Fund will grant $6,000 annually for the next 2 years to enable faculty members of Smith, Mount Holyoke, Amherst, and Massachusetts to study methods by which the 4 institutions can extend or initiate cooperative programs. At present a number of students from each of the colleges are enrolled in courses offered by one of the other institutions, and several faculty members are conducting courses in more than one college. The money granted will be used to release faculty members from some of their teaching duties and enable them to consider jointly how other cooperative measures might be developed.

Southeast Asia Program at Cornell

THE SOUTHEAST ASIA Program at Cornell University has received a $500,000 endowment grant from the Rockefeller Foundation to support teaching and research activities. This amount is in addition to $350,000 Cornell previously received from that foundation for developing the program's staff and facilities.

The program's main objectives are to instruct undergraduates on Southeast Asian affairs, to train advanced students for teaching, government work, business or other services relating to the area, and to develop information on the region through research work. The program also seeks to stimulate in the countries of Southeast Asia greater interest in the social sciences and the humanities. A Cornell center is maintained in Bangkok for this purpose and to help train Americans and others in Southeast Asian studies.

New York University Offers New Program

NEW YORK UNIVERSITY'S Washington Square College of Arts and Science is this fall offering a new program of studies for persons who intend to work among the country's Spanish-speaking citizens. The program combines pre-social-work training with courses in the Spanish language and civilization.

The 4-year program leads to the bachelor of arts degree. Three fundamental courses deal with cultural backgrounds, oral Spanish, and Spanish and Spanish-American civilization. Students who already speak Spanish well may substitute other social science courses. Students will be able to spend 3 hours or more a week gaining voluntary laboratory experience as group leaders, casework aides, hospital aides, translators, and escorts with Spanish-speaking groups. Laboratory work in Puerto Rico will be offered on a credit basis for upperclassmen, and some specially qualified students will receive scholarships from the University of Puerto Rico.

New Directory of Foundations

By THERESA WILKINS *

EARLY in September the seventh edition of *American Foundations and Their Fields* [1] made its appearance, replacing the 7-year-old previous edition. The new edition is not only several times as large in size and in coverage as the old edition but, from many points of view, much more useful. It describes 4,162 foundations as contrasted with the 899 contained in the sixth edition. The use of returns filed with the 64 Internal Revenue districts enabled the American Foundations Information Service to amass a wealth of information about private foundations not hitherto available to the public. The study was also broadened to include the transcription of available legal documents of foundations and trusts. Second transcriptions were made, where feasible, to insure currency of material obtained from Treasury Department reports. Records of 6,152 foundations were obtained, but usable material was secured for 4,162 legal entities which qualified as foundations by the Service definition.

Definition

A foundation as defined by the Service is

> . . . a non-profit, legal entity having a principal fund of its own, or receiving the charitable contributions of a living founder or founders, which is governed by its own trustees or directors and which has been established to serve the welfare of mankind.

This definition embraces funds, trusts, endowments, corporations, associations, societies, community foundations and trusts, and the National Science Foundation, an agency of the Federal Government, but "functionally a true foundation." Excluded were foundations which solicit for endowment or operating funds, those created for the benefit of a single institution or group, those domiciled at and part of an institution, and those whose activities are restricted to furnishing clinical or other community service. Grant-making programs of corporations conducted under the auspices of the corporation rather than under separate legal entities are likewise excluded.

Characteristics

The report analyzes foundations by historical development, legal structure, resources, expenditures, nature of work, and fields of current interest. Of the more than 4,000 foundations described only 10 were established prior to 1900. Each decade reveals an increasing number of foundations, with a larger percentage of the smaller type in recent years.

The total assets of all foundations covered in the report amount to $4.5 billion with concentration in the hands of a few foundations and in those geographical areas where wealth is. Nearly a third of the foundations (with 55 percent of the resources) are concentrated in New York State, and nine-tenths of those are in New York City. The seven largest foundations possessing $100 million and more in assets are: The Ford Foundation, $493,213,842; the Rockefeller Foundation, $447,686,573; Carnegie Corporation of New York, $178,861,599; W. K. Kellogg Foundation, $109,812,214; the Duke Endowment, $109,552,000; the Commonwealth Fund, $105,993,035; and the Pew Memorial Foundation, $104,987,129. Except for the W. K. Kellogg Foundation in Michigan and the Pew Memorial Foundation in Pennsylvania, these foundations maintain their headquarters in New York City.

Foundations, it is disclosed, operate in one of three ways: through grants to other organizations or individuals, by conducting service or research under their own auspices, or through both grant-making and operating programs. Their fields of interest range widely with social welfare in the lead followed by education. According to the author

> The provision of fellowships and scholarships in every class, and the fact that the largest number of foundations with $10 million and over in assets mentioned it, is evidence of the consuming interest of foundations in finding able individuals and helping them to develop their talents to the full, to the end of equipping them for leadership in society.

The major part of the volume is devoted to descriptions of the individual foundations, including insofar as available the items: name and address,

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[1] Wilmer Shields Rich. *American Foundations and Their Fields.* 7th ed. New York: American Foundations Information Service, sponsored by Raymond Rich Associates and Marts and Lundy, Inc., 1955. 784 p. $35.

legal structure, date of establishment, donor or donors, purpose, character of gift, geographical limitations, methods, policies regarding grants, current fields of interest, financial data, and officers and trustees. The geographical listing of the present edition does not lend itself to the functional grouping which characterized the previous edition. This lack is more than compensated for, however, by the two indexes: a coded alphabetical list of foundation names and the index of fields of current interest with the code numbers of the foundation specifying such interest.

Mrs. Rich estimates that approximately 7,300 foundations could be found which might meet the specifications for inclusion if it were practical to obtain records of all foundations. Whatever the omission, it may be safely said that no other publication provides a more valuable reference tool to "those who give but also to those who seek to receive."

Courses by Television

ENOUGH STUDENTS have taken credit courses by television to fill a large university. A survey by the Committee on Television of the American Council on Education lists 170 regular academic courses with a total enrollment of approximately 12,000. The courses have been offered by 44 different institutions.

The University of Houston has been giving some of the lectures in required freshman courses by television, with credit enrollments running as high as 700 for a single course. These students also meet on campus in small groups for discussion sessions. Here as elsewhere it has been found that on examination the television students do as well as others who have received traditional classroom instruction in the same courses.

The first time Southern California gave its Shakespeare on TV course, 213 students took the examination for college credit. Western Reserve University had 66 in the first college course ever offered on television—one in elementary psychology.

In connection with many of the credit courses, special materials, such as syllabi and reading lessons, are offered for sale to those who wish to follow the content closely but are not interested in earning college credit. In two instances such noncredit enrollment has exceeded 1,000. The course titled "Religions of Man" offered by Washington University and televised over the St. Louis educational television station KETC had 1,067 such viewers. Last year the University of California at Los Angeles sold 1,072 syllabi for its credit course on art appreciation. As many as 700 people bought the supplementary materials for two other courses: a religion course offered by Western Reserve University, and a course on child psychology offered by the University of Minnesota.

Commercial audience surveys estimate 75,000 to 100,000 additional viewers for some of these courses. The total, therefore, probably exceeds 10 million, not including those who view noncredit programs.

Hospital Administration Institute

CORNELL UNIVERSITY has received a grant of three-quarters of a million dollars from the Alfred P. Sloan Foundation for the establishment of an institute of hospital administration. First students are to be admitted to the institute in September 1956.

A principal aim of the institute will be to train a select group of students for careers in hospital administration. The program of study, which will lead to the degree of master of public administration in hospital management, or, with slightly different emphasis, to the degree of master of business administration in hospital management, will require 2 years of intensive study on the campus at Ithaca and a year of residency in an appropriate hospital. The number annually admitted for the training will be limited to about a dozen highly qualified applicants. To insure that only the best qualified will be admitted to the course, the foundation's grant for the new institute has included a generous provision for fellowships.

The center will be known as The Sloan Institute of Hospital Administration. When in full operation, the new unit will give as much attention to research in hospital problems as to its instructional program, a portion of the foundation grant having been earmarked for research personnel. The development of an extensive "in-service" program for existing hospital administrators and personnel has been proposed.

The grant to Cornell comes after a 3-year investigation by the Sloan Foundation into the economic position of various types of hospitals, the recruitment and training of hospital personnel, and the status of research in this broad field. The report states that, measured by almost any criterion, hospitals are big business. The annual value of the services rendered to the public in recent years by the more than 6,800 hospitals exceeds $2 billion. Full-time employees in those hospitals currently number

more than 1 million. The efficient management of hospitals is clearly of inestimable importance to the public, for increasingly their support must come from industry, labor, and the public.

The institute will be administered by the university's graduate school of business and public administration, and the dean of that school will be chairman of the intra-university board which will govern the new unit. The teaching function will be developed first, after which the research and other proposed new activities will be undertaken.

During the 2 years which the student will spend on the Ithaca campus his curriculum will normally include study in four principal areas: (1) General administrative practice, with work in organization and human relations; (2) specific management practices, especially finance, statistics, accounting, and related disciplines; (3) various specialties related to health care, with an opportunity to become familiar with broad community patient-care needs and the methods and objectives of various professional groups involved in the operation of a modern hospital; and (4) the application of administrative knowledge and practice to the specialized situation of the hospital.

Cooperative Program of Five Minnesota Colleges

THE LOUIS W. AND MAUD HILL FOUNDATION of St. Paul has granted $171,750 to 5 private colleges in Minnesota to enable them to continue an experiment in private liberal education. The colleges—Carleton College and St. Olaf College in Northfield, Gustavus Adolphus College in St. Peter, and Hamline University and Macalester College in St. Paul—will continue a cooperative program of bringing to their respective campuses distinguished scholars.

Each college receives annually $10,750 for the local program, including the stipend for the visiting professor, the coordination and integration of his services on the individual campus and among the colleges, and the development of library resources related to his field. An additional $3,500 goes annually to the Central Planning Committee, consisting of the presidents and deans of the participating colleges, to cover operating expenses, joint conferences, and other cooperative activities. The grant thus stimulates the development of cooperative relations and activities that are important for the whole field of liberal higher education.

Ohio Conference on Recruitment of College Teachers

REPRESENTATIVES from 34 Ohio colleges participated in October 1955 in a conference on recruitment of college teachers. The conference was sponsored by a committee of the Ohio College Association.

The report of the conference indicated much spirited discussion on many phases of the problem of providing adequate teachers for a doubled enrollment by 1970. It was pointed out in the discussion that excellent teaching was the best recruitment device; that people were attracted to college teaching as they observed interesting college teachers thoroughly enjoying their teaching, and vice versa; that there is need for improvement in the preparation of college teachers and that all possible procedures must be utilized for getting capable people into the profession and for keeping them effective and happy in their teaching.

Defense Studies Program

HARVARD UNIVERSITY is introducing a defense studies program this fall in an attempt to increase public and official understanding of the broad problems of national defense. The studies will be carried out with the assistance of a grant of $214,800 from The Ford Foundation.

The program will deal with the many problems created by the emergence of the United States as the principal military power of the free world. It will serve as a civilian center for training and research on the political, economic, and social aspects of the problem, and will provide a meeting ground for independent military and civilian thought and analysis.

The program stems from an experimental seminar on defense policy and administration conducted during the past year for students and faculty members of four graduate schools—public administration, law, business, and arts and sciences. As part of the new program that seminar will be expanded. It will continue to draw on military and government leaders for discussions. A major effort of the project, both for students and for staff, will be continuing study of the Nation's defense policies as revealed in such items as the defense budget, congressional hearings, statements by national leaders, and other official actions.

NEW PUBLICATIONS

Government Publications

How To Obtain

(*1*) *Cost Publications: Send request, enclosing remittance (check or money order), to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.*

(*2*) *Free Publications: Request direct from the agency issuing them.*

From the Office of Education

Statistical Summary of Education 1951–52, by Rose Marie Smith. Washington, U. S. Government Printing Office, 1955. 65 p. 30 cents. (Biennial Survey of Education in the United States, 1950–52, Chapter 1.)

Statistics of Land-Grant Colleges and Universities, Year Ended June 30, 1954, by Neva A. Carlson. Washington, U. S. Government Printing Office, 1955. 61 p. 25 cents. (Bulletin 1955, No. 8.)

Statistics of City School Systems: Staff, Pupils, and Finances 1951–52, by Lester B. Herlihy. Washington, U. S. Government Printing Office, 1955. 137 p. 45 cents. (Biennial Survey of Education in the United States, 1950–52, Chapter 3.)

Statistics of County and Regional Libraries Serving Populations of 50,000 or More: Fiscal Year 1954, by Mary M. Willhoite. Washington, 1955. 4 p. Proc. (Circular No. 449.)

Statistics of Negro Colleges and Universities 1951–52 and Fall of 1954, by Henry G. Badger. Washington, U. S. Government Printing Office, 1955. 16 p. Proc. 20 cents. (Circular No. 448.)

Statistics of Public Elementary and Secondary Education of Negroes in the Southern States: 1951-52, by Carol Joy Hobson. Washington, U. S. Government Printing Office, 1955. 18 p. Proc. 20 cents. (Circular No. 444.)

Supplementary Statistics of Public Secondary Schools, 1951–52, With Special Emphasis upon Junior and Junior-Senior High Schools, by Walter H. Gaumnitz. Washington, 1955. 10 p. Proc. (Circular No. 423.)

Statistics of State School Systems: Organization, Staff, Pupils, and Finances 1951–52, by Samuel Schloss and Carol Joy Hobson. Washington, U. S. Government Printing Office, 1955. 105 p. 35 cents. (Biennial Survey of Education in the United States, 1950–52, Chapter 2.)

Exchange Teaching Opportunities and Summer Seminars for American Elementary, Secondary, and Junior College Teachers Under the International Educational Exchange Program, 1956–57. Washington, U. S. Government Printing Office, 1955. 25 p. Free.

Incomplete High Schools—What, Where, and Why? by Walter H. Gaumnitz and William Gescheider. Washington, 1955. 9 p. Proc. Free. (Circular No. 452.)

Teaching Nutrition in the Elementary Schools. Washington, U. S. Government Printing Office, 1955. 32 p. 25 cents. (Nutrition Education Series, Pamphlet No. 7.)

What Some Communities Are Doing To Recruit Elementary Teachers. Washington, 1955. 16 p. Proc. (Education Briefs, No. 31.)

Non-Government Publications

A City College in Action: Struggle and Achievement at Brooklyn College 1930–55, by Thomas Evans Coulton. New York, Harper & Bros., 1955. 233 p. $3.50.

Story of the development of tuition-free Brooklyn College, which in 25 years has grown to have the largest liberal arts enrollment in the Nation. An account beginning with Brooklyn: The college and the borough down through the war years 1939–55 and the pressures brought to bear on the college by various national and local organizations.

Civic Universities: Aspects of a British Tradition, by W. H. G. Armytage. New York, John de Graff, Inc., 1955. 327 p. $5.

The author links the tradition of the foundations of the cathedral schools of the 11th century, the universities of the high Middle Ages, the virtuosos of the 17th century, and the literary and scientific societies of the 19th century, with the civic universities of the present day. He explains what the civic universities and university colleges represent and why they have arisen. Partly a history of learning, partly a history of imagination applied to technological change, and partly a history of the transmission of expert skill and knowledge in the field of science.

What Should Higher Education Be Doing in 1954? Myron H. Luke, *ed.* The Thorne Lectures. Hempstead, L. I., N. Y., Hofstra College, 1954. 63 p.

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The College Handbook and 1954–55 Supplement, Donald Karl and Barbara L. Diehl, *editors*. P. O. Box 592, Princeton, N. J., College Entrance Examination Board, 1953. 370 p. $1.

Presents descriptions of 163 accredited colleges which are members of the College Entrance Examination Board, with information on location, size, terms of admission, programs of study, freshman year, costs, financial assistance, and where to write for further information. Also includes a chapter on annual regional or national scholarships that can be used to defray expenses at any one of a number of colleges.

College and University Business Administration, vol. II. Compiled by the National Committee on the Preparation of a Manual on College and University Business Administration. Washington, American Council on Education, 1955. 267 p. $4.50.

A statement of general principles providing information and guidance in all areas of business administration beyond the accounting phases and procedures presented in volume I. Covers purchasing, physical plant, property and liability insurance, inventory of plant assets, management of auxiliary enterprises, organized activities, and service departments, student affairs, nonacademic personnel, staff welfare, investment management, sponsored research, and legal problems. Contains 60 pages of bibliography supplementing that given in the first volume.

Doctoral Programs Offered by Southern Universities. 881 Peachtree Street NE., Atlanta, Ga., Southern Regional Education Board, 1955. 175 p. $1.50.

Lists doctoral programs classified as graduate and offered by accredited institutions in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia as of July 1954. Includes the department and school in which the program is offered, name of the degree, number of degrees awarded from June 1949 to June 1954, and sources of additional information.

Handbook on International Study 1955. 1 East 67th Street, New York 21, Institute of International Education, Inc., 1955. 350 p. $2.50.

A guide for foreign students on study in the United States and for United States students on study abroad, with chapters on student exchange and the United States, education in the United States, education abroad, international study awards, summer opportunities, Government regulations, organizations serving exchange students and visitors, and research in the field of international education. An appendix includes extensive statistical data on higher education in the United States.

Industry-College Relations, by Edward Hodnett. Cleveland, Ohio, World Publishing Co., 1955. 158 p. $3.50.

Presents some of the findings of a survey sponsored by a committee of prominent educators and industrialists, created at the Industry-College Conference at White Sulphur Springs, W. Va., November 1953. Suggests ways in which industry-college relationships can be improved through such agencies as trustees, advisory committees, alumni and parents, and through such communication media as conferences, information services, and through recruiting and placement; discusses the possible contributions of such educational mechanisms as scholarships and fellowships, work-study programs, research and services, special courses, and adult education; and outlines some pressing problems of higher education and some of the values to industry of 2-year colleges and liberal arts colleges.

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